UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/326,502	06/04/99	KROLL S	COUL-005/04U

HM12/0212

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EXAMINER	
SIU,S	
ART UNIT	**PAPER NUMBER**
1631	11

DATE MAILED: 02/12/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/326,502	KROLL ET AL.	
	Examiner	Art Unit	
	Stephen Siu	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-82* is/are pending in the application.

4a) Of the above claim(s) *13-18 and 22-82* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 19-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5 and 7* .
18) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I, Species 1 (claims 1-12 and 19) in Paper No. 10 is acknowledged. The traversal is on the ground(s) that the inventions are not "completely unconnected in design, operation, and effect", that "the outlined methods share many steps in common" and that examination should be performed for the claims of Group I and Group III, or alternatively, with the claims of both Groups II and III. Upon consideration of Applicant's arguments, Group I, Species 1 (claims 1-12 and 19) and Group II, Species 1 (claims 20-21) are rejoined and will be examined together. Group III is considered a separate and distinct invention because the method in Group III is not co-extensive with the methods of Groups I and II. The claimed calculations are based on different parameters such as lean body mass. Therefore, the methods are patentably distinct and a search on one method would not fully encompass the other method. Applicant further states that the groups should be examined together because they are classified under the same class and subclass. This is not found persuasive because groups being tentatively classified under the same class and subclass does not, by itself, constitute evidence that they are not patentably distinct or that an undue search burden would not exist. The inventions are drawn to distinct methods, each method comprising unique steps that utilize unique parameters not fully encompassed by the other methods. As such, there would be an undue search burden to examine Groups I and II with Group III.

The requirement is still deemed proper and is therefore made FINAL.

Claims 13-18 and 22-82 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 10.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 19 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claim is drawn to an optimal dose of a radiopharmaceutical however, the disclosure only provides guidance on the calculation of an optimal effective therapeutic dose for certain radiopharmaceuticals such as ^{131}I-labeled Anti-B1, page 13. Although a general method of calculation of an optimal dosage of a radiopharmaceutical is provided, the specification does not describe the dosage of any radiopharmaceutical itself.

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention.* The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The

specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.)

With the exception a calculated optimal dosage of ^{131}I-labeled anti-B1 radiopharmaceutical, the skilled artisan cannot envision the optimal dosage of any radiopharmaceutical, regardless of the complexity or simplicity of the method of derivation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for deriving it. The dosage of each radiopharmaceutical itself is required. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (CAFC 1993) and Amgen Inc. V. Chugai Pharmacentical Co. Ltd., 18 USPQ2d 1016. In Fiddes v. Baird, 30 USPQ2d 1481, 1483, claims directed to mammalian FGF's were found unpatentable due to lack of written description for the broad class. The specification provided only the bovine sequence.

Finally, University of California v. Eli Lilly and Co., 43 USPQ2d 1398, 1404, 1405 held that:

> ...To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention." *Lockwood v. American Airlines, Inc.* , 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (1997); *In re Gosteli* , 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) (" [T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed."). Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." *Lockwood* , 107 F.3d at 1572, 41 USPQ2d at 1966.
>
> An adequate written description of a DNA, such as the cDNA of the recombinant plasmids and microorganisms of the '525 patent, "requires a precise definition,

such as by structure, formula, chemical name, or physical properties," not a mere wish or plan for obtaining the claimed chemical invention. *Fiers v. Revel* , 984 F.2d 1164, 1171, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993). Accordingly, "an adequate written description of a DNA requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it; what is required is a description of the DNA itself." Id. at 1170, 25 USPQ2d at 1606.

The name cDNA is not itself a written description of that DNA; it conveys no distinguishing information concerning its identity. While the example provides a process for obtaining human insulin-encoding cDNA, there is no further information in the patent pertaining to that cDNA's relevant structural or physical characteristics; in other words, it thus does not describe human insulin cDNA. Describing a method of preparing a cDNA or even describing the protein that the cDNA encodes, as the example does, does not necessarily describe the cDNA itself. No sequence information indicating which nucleotides constitute human cDNA appears in the patent, as appears for rat cDNA in Example 5 of the patent. Accordingly, the specification does not provide a written description of the invention of claim 5.

Therefore, only an optimal dosage of ^{131}I-labeled Anti-B1 radiopharmaceutical but not the full breadth of the claim meets the written description provision of 35 USC 112, first paragraph. The species specifically disclosed are not representative of the genus because the genus is highly variant. Applicant is reminded that Vas-Cath makes clear that the written description provision of 35 USC 112 is severable from its enablement provision. (See page 1115.)

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 and 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "the clearance profile", "the activity hours", "the residence time", which lack antecedent basis.

Claims 1 and 19 recite a final step of establishing the "optimally effective dose" of a radiopharmaceutical by solving an equation for "therapeutic dose". It is not clear if the "therapeutic dose" is the same as the "optimally effective dose". If the "therapeutic dose" is not the same as the "optimally effective dose", then it is not clear how the optimally effective dose is derived in the final step.

Claim 4 recites "the lean body mass" which lacks antecedent basis.

Claim 19 recites "the patient population", "the clearance profile", "the activity hours", "the residence time" which each lack antecedent basis.

Claim 20 recites "Equation I" in line 7 and "Equation 1" in line 12. It is not clear if these two references refer to the same equation.

Claim 20 recites "the activity hours" which lacks antecedent basis.

Claim 21 recites "the clearance profile" and "the residence time" which lack antecedent basis.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 19 is rejected under 35 U.S.C. 102(b) as being anticipated by Order (I.J. Radiation Oncology Bio. Phys, 6:703-710, 1980, PTO-1449 reference D11).

Order teaches a therapeutically effective dose of a radiopharmaceutical in a patient and demonstrates the optimal therapy of intrahepatic malignancies with radiolabelled antibodies. No major organ toxicity was noted (see abstract). Thus, Order teaches an optimally effective therapeutic dose of a radiopharmaceutical for administration to a patient and meets the limitations of the claim. It is brought to the Applicant's attention that a product by process claim is examined for novelty and obviousness of the claimed product only, and that no consideration is given to the novelty or obviousness of the method of making the claimed product. See M.P.E.P. 2113.

Conclusion

No claims allowed. Loevinger (Medical Internal Radiation Dose Committee of the Society of Nuclear Medicine, Pamphlet No. 1, Revised, March 1976) teaches a method of calculating doses of radionuclides wherein the rate of absorption per unit mass is calculated utilizing activity functions. In one embodiment, the activity function is a function of physical decay (page 8, col.1, equation 25) which is a measure of clearance. However, Loevinger does not teach the selection of the lower of the patient's mass and maximum effective mass, utilizing the lower of the patient's mass and maximum effective mass in the determination of activity hours, and the calculation of a therapeutic dose by multiplication of activity hours divided by residence time by a ratio of desired total body dose to maximum tolerated dose. Thus, Loevinger is not believed to anticipate the claimed invention.

Inquiries

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Stephen Siu, whose telephone number is (703) 308-7522. The Examiner can normally be reached from 7:00 a.m. to 3:30 p.m. on weekdays. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Michael Woodward, can be reached at (703) 308-4028. Papers related to this application may be submitted to Art Unit 1631 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 CFR 1.6(d)). NOTE: If applicant does submit a paper by FAX, the original copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED, so as to avoid the processing of duplicate papers in the Office. The Fax number is (703) 308-0294. Please call the Examiner at (703) 308-7522 before the transmission to expedite delivery of the fax. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Stephen Siu

JOHN S. BRUSCA, PH.D
PRIMARY EXAMINER